

Date: Sat, 27 Nov 93 04:30:44 PST  
From: Ham-Homebrew Mailing List and Newsgroup <ham-homebrew@ucsd.edu>  
Errors-To: Ham-Homebrew-Errors@UCSD.Edu  
Reply-To: Ham-Homebrew@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Homebrew Digest V93 #115  
To: Ham-Homebrew

Ham-Homebrew Digest                      Sat, 27 Nov 93                      Volume 93 : Issue 115

Today's Topics:

                    2M 10w amp? (2 msgs)  
                    Amplifier for 1270MHz  
                    Dave's Kits -- Question  
                    LB1473 chips?  
                    Legality of Homebrew Frequency Hopping  
                    Phase-lock to WWV ?  
                    Phasing SSB - new part that might help. (2 msgs)

Send Replies or notes for publication to: <Ham-Homebrew@UCSD.Edu>

Send subscription requests to: <Ham-Homebrew-REQUEST@UCSD.Edu>

Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Homebrew Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-homebrew".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.

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Date: Thu, 25 Nov 1993 19:27:36 GMT  
From: library.ucla.edu!agate!howland.reston.ans.net!sol.ctr.columbia.edu!  
news.kei.com!ub!csn!yuma!galen@network.ucsd.edu  
Subject: 2M 10w amp?  
To: ham-homebrew@ucsd.edu

In article <CH1q8E.BCu@mentor.cc.purdue.edu> blumb@sage.cc.purdue.edu (Bill Blum)  
writes:

>Well, I have a choice.

>I can either shell out the \$\$ to buy a 2m amp for my HT, or I can buy a  
>theory book, learn theory, and build one.

>Recommendations either way?

>Bill Blum N9VLS blumb@sage.cc.purdue.edu           Purdue University

You could get a Ramsey PA-1 kit, 30 watts or so with 3 watts in. Comes  
in a kit w/o case, heatsink, switching or yo can get it fully assembled.

The kit is about \$30 and the assembled is about \$90.  
Ramsey Electronics  
716-924-4560  
793 Canning Pkwy  
Victor, NY 14564

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Date: 27 Nov 93 03:08:07 GMT  
From: ogicse!uwm.edu!rpi!psinnntp!psinnntp!arrl.org@network.ucsd.edu  
Subject: 2M 10w amp?  
To: ham-homebrew@ucsd.edu

In rec.radio.amateur.homebrew, blumb@sage.cc.purdue.edu (Bill Blum) writes:  
>Well, I have a choice.

>

>I can either shell out the \$\$ to buy a 2m amp for my HT, or I can buy a  
>theory book, learn theory, and build one.

>

Depends whether you want to learn about amplifiers  
or save money.

If you want to learn about them, blowing up \$50 in  
power transisistors is probably cheap in comparision  
to other educational expenses.

But, saving money is unlikely unless someone gives  
you the parts to build build it (Does HP still do  
that for their employees?)

Unfortunately, the design of a 10 watt VHF amp just  
isn't that cut and dry, like operational amplifiers.  
There are commercial products out there can be easily  
mistuned into oscillators. Part of the problem is  
the lack of information, particularly with bipolar  
VHF transistors. Thus, you tend to see a lot of  
\*guesswork\* On the other hand, you often don't see  
much of an attempt to obtain stability....

The VHF FETs aren't as bad--at least you can often get  
small signal data that is useful in designing in  
stability, though additional tweaking is sometimes  
needed for best power matching. But, these tend to  
be more expensive and not run well off of 12 volts.  
Also, for some reason, the high power ones seem to  
be rather fragile (MRF 141G only specified at a 5:1  
mismatch), though the 30 watt devices are pretty rugged.

I'm thinking of writing up a stable 2 to 10 watt MRF 137 design, though it needs a 23 volt power supply. Running it off a voltage doubler add spurs 75 dB down, so that part still needs work.

Zack Lau KH6CP/1

Internet: zlau@arrl.org "Working" on 24 GHz SSB/CW gear  
Operating Interests: 10 GHz CW/SSB/FM  
US Mail: c/o ARRL Lab 80/40/20 CW  
225 Main Street Station capability: QRP, 1.8 MHz to 10 GHz  
Newington CT 06111 modes: CW/SSB/FM/packet  
amtor/baudot  
Phone (if you really have to): 203-666-1541

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Date: Mon, 22 Nov 1993 20:16:09 GMT  
From: munnari.oz.au!spool.mu.edu!howland.reston.ans.net!agate!  
headwall.Stanford.EDU!Csl!paulf@network.ucsd.edu  
Subject: Amplifier for 1270MHz  
To: ham-homebrew@ucsd.edu

wa2sff@cbnewsh.cb.att.com (joseph.e.wilkes) writes:

>I am getting active on 1270 satellites and I need an amplifier  
>to raise the 10 Watts of my rig upto about 100 watts.

Most folks seem to do pretty well into A0-13 using 10w with medium gain yagis. If you're going for a better uplink, you might want to consider some of the newer optimized long boom L - Band yagis. As the the saying goes, aluminum tends to be cheaper than silicon...

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-=Paul Flaherty, N9FZX | "Fighter pilots make movies. Bomber pilots make  
->paulf@Stanford.EDU | history." -- Jake Grafton

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Date: Sat, 20 Nov 1993 08:36:22 -0500  
From: think.com!spdcc!merk!harvee.billerica.ma.us!esj@uunet.uu.net  
Subject: Dave's Kits -- Question  
To: ham-homebrew@ucsd.edu

In <2cfuae\$b7i@oak.oakland.edu>, prvalko writes:  
>

>Have any of you put together the "Dave's Kits" 20M QRP radio?

>

>What do you thing/what have you heard?

in real life(tm) its dan's small parts and kits. dave benson (nn1g)  
designed the radio.

it is a 1.5w qrp tranciever. the rx is a superhet with a xtal filter.  
it sounds real nice. I'm building an 80m version and you can get it for  
40m also. it is not a simple kit. you get 4 bags of parts, you get to  
wind toroids, hack up xformers, redrill holes in the pc board and every  
so often, figure out which is right, the pcb or the schematic :- ) then  
you get to tune it.... yee-haa!

I am not being sarcastic when I say that I am truly having a ton of fun  
putting this kit together! if you are feeling intimidated by a kit of  
this complexity, wait a few months for the next qrp-ne club project. I  
can't say much about it yet, but it promises to be neat! at the very  
least, it will be cw but I'm pushing for qrp amtor capability either  
built in or as a hack-on...

--- eric

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HOME: esj@harvee.billerica.ma.us HAM ka1eec  
WORK: 617.630.4687 (w) esj@ruby.polaroid.com  
source of the public's fear of the unknown since 1956

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Date: Wed, 24 Nov 1993 13:08:14 GMT  
From: ucsnews!sol.ctr.columbia.edu!emory!kd4nc!ke4zv!gary@network.ucsd.edu  
Subject: LB1473 chips?  
To: ham-homebrew@ucsd.edu

In article <fmitchCGynpu.3Jo@netcom.com> fmitch@netcom.com (Felton Mitchell)  
writes:

>i have a hal cri-200 "dumb" rtty modem which has a very nice x/y  
>tuning display using a led diode matrix... the chips which drive  
>the matrix are labeled LB1473 ... i don't reconginze the manufacturer  
>on the chips... no name, just a logo...

Sounds like a copy of the National Semiconductor bargraph driver  
chips to me.

>anyway, i want to build a stand alone tuning unit to use with some of  
>the more "modern" modems, and would like to duplcate the circuit in

>the cri-200 ... i have tried to find the lb1473 chips to no avail...  
>no reference or cross-reference has them listed... does anyone know  
>of a source of these chips or a substitute... and, if i find the  
>chips, i desperately need a data sheet on them...

Radio Shack carries the National bargraph driver chips. Data sheets included.

Gary

--

Gary Coffman KE4ZV	Where my job's going,	gatech!wa4mei!ke4zv!gary
Destructive Testing Systems	I don't know. It might	uunet!rsiatl!ke4zv!gary
534 Shannon Way	wind up in Mexico.	emory!kd4nc!ke4zv!gary
Lawrenceville, GA 30244	-NAFTA Blues	

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Date: 26 Nov 93 18:27:22 GMT  
From: psinntp!cooper!mark@uunet.uu.net  
Subject: Legality of Homebrew Frequency Hopping  
To: ham-homebrew@ucsd.edu

Hello,

I am posting these questions for current information only so that I can better consider a project that I would like to undertake in the future. Simply put, I am interested in utilizing some of the more open frequency bands (27 MHz, 49 MHz, 6 meter, 72 MHz) in such a way as to have two transceivers communicate with each other and, when interference on the current channel is detected, hop to another channel nearby. My specific intended application is in RC aircraft where interference on one of the 10 KHz wide control channels can mean the loss of an expensive plane, property damage and personal injury. RC aircraft primarily use the 72 Mhz band and have dozens of channels within this band. From a legal point of view (FCC), what would the restrictions be on a homebrew transceiver system that is capable of hopping between different channels within the 72 MHz band? What would be the restrictions on the same idea in the licensed 6-meter band or the unlicensed 27/49 Mhz bands?

I'd like to stress that this is for information only right now to provide myself with a reality check on my ideas. Thanks for the help and advice in advance!

; Mark Balch	The Future is MPP!	
; The Cooper Union	mark@alf.cooper.edu	[slow but reliable]
; (212) 353-4350	mark@magnum.cooper.edu	[fast but chancy]

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Date: Thu, 25 Nov 1993 16:34:07 GMT  
From: library.ucla.edu!agate!iat.holonet.net!pubcon.fort-worth.tx@network.ucsd.edu  
Subject: Phase-lock to WWV ?  
To: ham-homebrew@ucsd.edu

You think YOUR dreams are shattered. When I was a kid and my dad tuned in WWV for me for the first time, I thought that the government had chained some poor dope to a microphone, forcing him to read the time once each minute for as long as he lived. Then one night, with the bands wide open, I could hear WWVH in Hawaii, and I thought, "Oh, great. Now that guy has a lady to keep him company."

-----  
Date: Fri, 26 Nov 1993 18:12:17 GMT  
From: yuma!galen@purdue.edu  
Subject: Phasing SSB - new part that might help.  
To: ham-homebrew@ucsd.edu

In article <CH2qzE.D6L@seastar.org> jjw@seastar.org (John Welch) writes:  
> Regarding the recent discussions about SSB generation & detection using  
> phasing, has anybody seen the ad on pg 37 of November's Microwaves &  
> RF? It looks like Mini-Circuits has a new device - a 90 degree  
> splitter with <1 degree of phase unbalance and <.2db of amplitude  
> imbalance from 3.2 to 32MHz. Cost is 89.95 qty 1-9.  
> Looks interesting... Anybody out there try this yet?  
>-->jjw n9jzw jjw@seastar.org  
>John Welch, N9JZW

Mini-Circuits also has 90 deg. splitters with less stringent specs for \$10-50 with various freq ranges.

What is a practical limit for Phase and Amplitude unbalance to be able to use a phasing exciter?

Are there any other companies making 90 deg. power dividers?

Galen, KF0YJ

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Date: 26 Nov 1993 18:29:07 GMT  
From: swrinde!gatech!usenet.ins.cwru.edu!lerc.nasa.gov!news.larc.nasa.gov!grissom.larc.nasa.gov!kludge@network.ucsd.edu  
Subject: Phasing SSB - new part that might help.  
To: ham-homebrew@ucsd.edu

In article <Nov26.181217.36035@yuma.ACNS.ColoState.EDU>  
galen@picea.CFNR.ColoState.EDU (Galen Watts) writes:  
>In article <CH2qzE.D6L@seastar.org> jjw@seastar.org (John Welch) writes:  
>> Regarding the recent discussions about SSB generation & detection using  
>>phasing, has anybody seen the ad on pg 37 of November's Microwaves &  
>>RF? It looks like Mini-Circuits has a new device - a 90 degree  
>>splitter with <1 degree of phase unbalance and <.2db of amplitude  
>>imbalance from 3.2 to 32MHz. Cost is 89.95 qty 1-9.  
>  
>Mini-Circuits also has 90 deg. splitters with less stringent specs for  
>\$10-50 with various freq ranges.  
>  
>Are there any other companies making 90 deg. power dividers?

Has anyone here used any of the phasing networks from Networks, Inc.?  
--scott  
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"C'est un Nagra. C'est suisse, et tres, tres precis."

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Date: 23 Nov 1993 16:08:39 GMT  
From: nntp.ucsb.edu!library.ucla.edu!agate!howland.reston.ans.net!math.ohio-  
state.edu!sdd.hp.com!elroy.jpl.nasa.gov!news.larc.nasa.gov!grissom.larc.nasa.gov!  
kludge@network.ucsd.edu  
To: ham-homebrew@ucsd.edu

References <1993Nov22.154419.23109@ke4zv.atl.ga.us>, <CGwr5J.HzG@csn.org>,  
<1993Nov23.071628.27387@ke4zv.atl.ga.us>p.com  
Subject : Re: Amplifier for 1270MHz

In article <1993Nov23.071628.27387@ke4zv.atl.ga.us> gary@ke4zv.atl.ga.us (Gary  
Coffman) writes:  
>In article <CGwr5J.HzG@csn.org> dfeldman@teal.csn.org (Dave Feldman) writes:  
>>  
>>Are you aware of any kw-class amps available (not surplus; designed for  
>>ham use)? Not for satellite -- interested for weak signal terrestrial...  
>  
>I'm not aware of any commercial kW amps designed for the amateur market  
>in the 1.2 GHz band.  
>  
>You might be able to push a 8890 or 3CX800 to 1.2 GHz in a cavity design,  
>but I wouldn't bet on it being stable. You might be able to do a 9 tube  
>ring amp using the 3CX100A5, but I suspect it would be a nightmare to tame.  
>Six of the German amps combined with Wilkinson combiners might do. Probably

How about dropping the Wilkinson combiners and driving six individual  
dipoles, each with one amp? Since you can mount the amps at the antenna,

you won't need six feedlines (unless you want to be able to play around with phasing from the ground and make a steerable array). The price per dipole radiator should be a lot less than per combiner, especially if you make your dipoles out of scrap brazing rod soldered to connectors.

--scott

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"C'est un Nagra. C'est suisse, et tres, tres precis."

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End of Ham-Homebrew Digest V93 #115

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